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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,901	01/14/2004	Paul A. Farrar	303.572US2	3098
21186	7590	08/10/2005	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402-0938			CLARK, SHEILA V	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/756,901

Applicant(s)

FARRAR, PAUL A.

Examiner

S. V. Clark

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 and 33-40 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-14 and 17-32 is/are allowed.
- 6) ☒ Claim(s) 15 and 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akram et al in view of Miyata et al (5,885, 891).

Akram et al teaches forming a memory device with an array of memory cells see figure 4a and col.5, line 14-18 whereby a metal pattern line circuit patterns are taught to be connected to bond pads 122 (see also figure 4b) and connected to solder balls 123.

Akram teaches in col. 8 that an insulating layer (passivation ) is formed over contacts pads 122 and them portions are removed to expose said pads ( see col., 8 lines 48-50. Solder is taught deposited on the exposed pad portions (col. 8, line 55) and then a heating curing or annealing step is taught ( line 64).

Solders formed of tin/lead are taught col. 8, in line 53.

Use of resist layers to form solder balls are not knew in this art and though Akram et al fails to specifically use the term " resist" he does suggest the obviousness of using dielectric or insulative material that is known in the art which is deemed to the well known use of resist. Further Miyata et al teaches the obviousness use of a resists layer 5 in insulating layer 2 to form solder ball 6.

And electrolytic deposition is also well known in this art.

Claims 15, 16 are rejected.

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Applicant's arguments filed 5-26-2005 have been fully considered but they are not persuasive. Claim 15 continues to be regarded as a basic device with solder ball forming steps are deemed to be obvious. The other claims contain more substantive device structure in combination with substantive method structure and have been considered allowable over the prior art of record.

Any inquiry concerning this communication should be directed to S. V. Clark at telephone number (571) 272-1725.



S. V. Clark  
Primary Examiner  
Art Unit 2823

August 8, 2005